In the Claims

1. (Currently Amended) An RTM molding method comprising:

disposing a reinforcing fiber substrate in a cavity of a mold consisting of a plurality of dies, wherein an intermediate member having resin paths extending through said intermediate member in its thickness direction and having grooves for resin paths formed on its one surface and through holes communicating with said grooves and extending to its reinforcing fiber substrate disposed-side surface opposite to said one surface through said intermediate member is disposed between dies forming said mold, liquid thermosetting resin is injected to said reinforcing fiber substrate from a plurality of positions via said intermediate member almost simultaneously, and a groove for discharging said resin which extends substantially over the entire circumference of said reinforcing fiber substrate, is formed on any one of said dies,

clamping said mold,

carrying out vacuum suction from a resin discharge line for a predetermined period of time of at least from a time after clamping said mold to a time starting resin injection, and

injecting said resin to complete molding,

wherein 1) divided areas with respect to a surface direction of said reinforcing fiber substrate are assumed, each divided area is one in which injected resin expands over the entire surface in said each divided area and can be substantially uniformly impregnated in a thickness direction of said substrate, and resin introducing paths are formed for respective assumed divided areas for introducing the injected resin into said respective divided areas, 2) a member for resin injection communicates with a groove formed on the intermediate member and 3) a member for resin discharge is nipped and sealed by the intermediate member and a die facing the intermediate member via the reinforcing fiber substrate.

2.-4. (Cancelled)

5. (Previously Presented) The RTM molding method according to claim 1, wherein a groove for discharging resin, which extends substantially over the entire circumference of said reinforcing fiber substrate, is formed on said intermediate member.

6. (Cancelled)

7. (Previously Presented) The RTM molding method according to claim 1, wherein said intermediate member is made from a metal or a resin.

8. (Cancelled)

9. (Cancelled)

10. (Currently Amended) An RTM molding method comprising:

disposing a reinforcing fiber substrate in a cavity of a mold consisting of a plurality of dies, wherein an intermediate member having resin paths extending through said intermediate member in its thickness direction is made of a perforated plate or resin film provided with a plurality of through holes and is disposed between dies forming said mold, liquid thermosetting resin is injected to said reinforcing fiber substrate from a plurality of positions via said intermediate member almost simultaneously, and a groove for discharging said resin which extends substantially over the entire circumference of said reinforcing fiber substrate, is formed on any one of said dies,

clamping said mold, and thereafter

injecting said resin to complete molding,

wherein 1) divided areas with respect to a surface direction of said reinforcing fiber substrate are assumed, each divided area is one in which injected resin expands over the entire surface in said each divided area and can be substantially uniformly impregnated in a thickness direction of said substrate, and resin introducing paths are formed for respective assumed divided areas for introducing the injected resin into said respective divided areas, 2) a groove for a resin path having a depth of 0.5-1 mm is provided on a die facing said intermediate member, ~~and~~ 3) a gap is formed between said intermediate member and a die facing said intermediate member, and said gap is set in a range of 1 to 10 mm, 4) a member for resin injection communicates with a groove formed on the intermediate member and is nipped and sealed by the intermediate member and a die facing the intermediate member, and 5) a member for resin discharge is nipped and sealed by the intermediate member and a die facing the intermediate member via the reinforcing fiber substrate.

11.-12. (Cancelled)

13. (Previously Presented) The RTM molding method according to claim 1, wherein a core material is laminated to said reinforcing fiber substrate.

14. (Previously Presented) The RTM molding method according to claim 1, wherein a tube for resin injection and/or a tube for resin discharge is provided being nipped between

parting surfaces of dies, and portions between said tube and said dies are sealed with an elastic material.

15. (Original) The RTM molding method according to claim 14, wherein an end portion of an O-ring for sealing said cavity of said mold at positions of parting surfaces of dies is incorporated into said elastic material for seal.

16. (Previously Presented) The RTM molding method according to claim 1, wherein, while resin is injected into said mold at a pressurized condition, gas and excessive resin in said mold are discharged intermittently.

17. (Original) The RTM molding method according to claim 16, wherein, when a resin pressure in said mold of resin pressurized and injected is referred to as Pm and a resin discharge pressure at an injection port for injecting resin is referred to as Pi, a flow rate of resin flowing into said mold is controlled by selective control between conditions of Pm=Pi and Pm<Pi.

18. (Original) The RTM molding method according to claim 16, wherein a flow rate of resin flowing into said mold is controlled by adjustment of a diameter of a discharge port for discharging resin.

19. (Original) The RTM molding method according to claim 18, wherein said adjustment of said diameter of said discharge port and a timing for said adjustment are stored in memory, and based on the stored information, said flow rate of resin flowing into said mold is automatically controlled.

20. (Previously Presented) The RTM molding method according to claim 1, wherein, when resin is injected into said cavity of said mold at a pressurized condition, a ratio of a flow rate of resin per a unit time (Q: cc/min.) to a projected area of said cavity (S: m^2) (Q/S: cc/min.·m^2) is in a range of $50<Q/S<600$.

21. (Original) The RTM molding method according to claim 20, wherein the product of said ratio (Q/S: cc/min.·m^2) and a pressurizing force of resin (P: MPa) ((Q/S)xP: ccMPa/min.·m^2) is in a range of $20 \leqq (Q/S)xP \leqq 400$.

22. (Original) The RTM molding method according to claim 20, wherein a pressurizing force of resin is in a range of 0.2 to 0.8 MPa.

23. (Original) The RTM molding method according to claim 20, wherein said resin is cured for 3 to 30 minutes at a constant heating temperature in a range of 60 to 160°C.

24-49. (Cancelled)

50. (Currently Amended) An RTM molding device for disposing a reinforcing fiber substrate in a cavity of a mold consisting of:

a plurality of dies, wherein an intermediate member having resin paths extending through said intermediate member in its thickness direction and having grooves for resin paths formed on its one surface and through holes communicating with said grooves and extending to its reinforcing fiber substrate disposed-side surface opposite to said one surface through said intermediate member is disposed between dies forming said mold for injecting liquid thermosetting resin to said reinforcing fiber substrate from a plurality of positions via said resin paths almost simultaneously,

a groove for discharging resin, which extends substantially over the entire circumference of said reinforcing fiber substrate, is formed on any one of said dies,

a clamp for said mold, and thereafter injecting said resin to complete molding, characterized in that divided areas with respect to a surface direction of said reinforcing fiber substrate are assumed, each divided area is one in which injected resin expands over the entire surface in said each divided area and can be substantially uniformly impregnated in a thickness direction of said substrate,

resin introducing paths are formed for respective assumed divided areas for introducing the injected resin into said respective divided areas, ~~and~~

means for carrying out vacuum suction from a resin discharge line for a predetermined period of time of at least from a time after clamping said mold to a time starting resin injection,

a member for resin injection that communicates with a groove formed on the intermediate member and which is nipped and sealed by the intermediate member and a die facing the intermediate member, and

a member for resin discharge which is nipped and sealed by the intermediate member and a die facing the intermediate member via the reinforcing fiber substrate.

51-53. (Cancelled)

54. (Previously Presented) The RTM molding device according to claim 50, wherein a groove for discharging resin, which extends substantially over the entire circumference of said reinforcing fiber substrate, is formed on said intermediate member.

55. (Cancelled)

56. (Previously Presented) The RTM molding device according to claim 50, wherein said intermediate member is made from a metal or a resin.

57. (Cancelled)

58. (Cancelled)

59. (Currently Amended) An RTM molding device for disposing a reinforcing fiber substrate in a cavity of a mold consisting of a plurality of dies, wherein an intermediate member having resin paths extending through said intermediate member in its thickness direction is made of a perforated plate or resin film provided with a plurality of through holes and is disposed between dies forming said mold for injecting liquid thermosetting resin to said reinforcing fiber substrate from a plurality of positions via said resin paths almost simultaneously, and a groove for discharging said resin which extends substantially over the entire circumference of said reinforcing fiber substrate, is formed on any one of said dies, a clamp for said mold, and thereafter injecting said resin to complete molding, characterized in that divided areas with respect to a surface direction of said reinforcing fiber substrate are assumed, each divided area is one in which ~~injected~~ injects said resin expands over the entire surface in said divided area and can be substantially uniformly impregnated in a thickness of said substrate, and resin introducing paths are formed for respective assumed divided areas for introducing the injected resin into said respective divided areas, wherein 1) a groove for a resin path is provided on a die facing said intermediate member, ~~and~~ 2) wherein a gap having a depth of 0.5 to 1 mm is formed between said intermediate member and a die facing said intermediate member, and said gap is set in a range of 1 to 10 mm, 3) a member for resin injection communicates with a groove formed on the intermediate member and is nipped and sealed by the intermediate member and a die facing the intermediate member, and 4) a member for resin discharge is nipped and sealed by the intermediate member and a die facing the intermediate member via the reinforcing fiber substrate.

60.-61. (Cancelled)

62. (Previously Presented) The RTM molding device according to claim 50, wherein a core material is laminated to said reinforcing fiber substrate.

63. (Previously Presented) The RTM molding device according to claim 50, wherein a tube for resin injection and/or a tube for resin discharge is provided being nipped between parting surfaces of dies, and an elastic material for seal is interposed between said tube and said dies.

64. (Original) The RTM molding device according to claim 63, wherein an end portion of an O-ring for sealing said cavity of said mold at positions of parting surfaces of dies is incorporated into said elastic material for seal.

65. (Previously Presented) The RTM molding device according to claim 50, wherein means for, while injecting resin into said mold at a pressurized condition, discharging gas and excessive resin in said mold intermittently is provided.

66. (Original) The RTM molding device according to claim 65, wherein, when a resin pressure in said mold of resin pressurized and injected is referred to as Pm and a resin discharge pressure at an injection port for injecting resin is referred to as Pi, means for controlling a flow rate of resin flowing into said mold by selective control between conditions of Pm=Pi and Pm<Pi is provided.

67. (Original) The RTM molding device according to claim 65, wherein means for controlling a flow rate of resin flowing into said mold by adjusting a diameter of a discharge port for discharging resin is provided.

68. (Original) The RTM molding device according to claim 67, wherein means for storing in memory said adjustment of said diameter of said discharge port and a timing for said adjustment, and based on the stored information, automatically controlling said flow rate of resin flowing into said mold, is provided.

69. (Original) The RTM molding device according to claim 67, wherein said means for adjusting said diameter of said discharge port comprises a valve opening/closing device.

70.-85. (Cancelled)